The Massachusetts Environmental Results Program—Improving Environmental Performance on an Industry Sector Basis

by Lauren Liss, Ira Leighton, Sylvia K. Lowrance, and Thomas J. Gibson

How can states enhance the environmental performance of a large number of small sources within their regulatory system? How can states make a long-term commitment to measure environmental performance and provide flexibility to achieve environmental results? How can states link technical assistance with regulatory compliance and performance indicators? The Massachusetts Environmental Results Program (ERP) offers one approach toward addressing these and other environmental management issues. Now more than five years old, this innovative approach to environmental protection has resulted in improvements in compliance and other aspects of environmental performance within individual facilities and across whole business sectors.

This summer, the program was named a semi-finalist, out of 1,200 programs considered, for the 2001 **Innovations in American Government Program,** *awarded by Harvard University's John F. Kennedy School of Government and the Ford Foundation. This award strives to identify and celebrate outstanding examples of creative problem solving in the public sector.*

The program's effectiveness is being recognized in many different forums. For example, in its 2000 report, *Environment.gov*, the National Academy of Public Administration noted that the Massachusetts Department of Environmental Protection (MA DEP) has accomplished two remarkable breakthroughs with ERP:

"It has greatly expanded the universe of small businesses in three sectors – printing, dry cleaning, and photo processing – on record with the state's regulatory system, and thus likely to be responsive to state requirements;

"It has created a powerful incentive for the owners or managers of those businesses to take personal responsibility for complying with environmental regulations."

This summer, the program was named a semi-finalist, out of 1,200 programs considered, for the 2001 *Innovations in American Government* Program, awarded by Harvard University's John F. Kennedy School of Government and the Ford Foundation. This award strives to identify and celebrate outstanding examples of creative problem solving in the public sector.

The U.S. Environmental Protection Agency (EPA) believes the ERP process is an innovative approach with great potential for improving environmental protection. In a letter last summer to MA DEP Commissioner Lauren Liss, EPA noted that "ERP is one of the most promising efforts to come through the Project XL portal and we endorse it for further exploration of other possible applications of its ideas." This endorsement came from the EPA Innovation Action Council, a group of senior career EPA officials charged with promoting innovations across the agency. The council supported the creation of a partnership project with MA DEP to provide ERP information to other states that may use the approach to address priority environmental problems.

This article describes the ERP approach and its tools, outlines what it has achieved to date, and summarizes the partnership EPA and MA DEP have established to promote use of the ERP approach.

What is the Environmental Results Program?

The MA DEP established ERP on a basic premise – small business compliance will improve if facilities have a better knowledge and understanding of the state's regulatory requirements. ERP represents a fundamentally different approach to environmental management, for it is designed to set industry-wide environmental performance standards which replace, where applicable, case-by-case permits and require a facility-specific annual certification of compliance. Currently, it is a mandatory program for three small-business sectors – printers, photo processors, and dry cleaners – in Massachusetts. Facilities in these sectors receive compliance assistance materials to help conduct their own environmental self-audit. Based on the results, the facility either certifies compliance, or if problems are found, develops a Return-to-Compliance plan. The self-certifications, which cover all air, water, and waste performance standards, are signed by a senior official at the facility, usually the owner or senior manager. This creates

continued on next page

continued from previous page

personal accountability for environmental results.

This shift in accountability resonates within many companies. One environmental manager at a medium-sized electronics firm, which had participated in an early pilot of ERP, related, "It meant that my boss [the president] gave me the 'keep me out of jail speech' every time that he signed [the self-certification]." Another person responsible for compliance at a small printing company said, "I'm glad they made it required. It's something they [MA DEP] should have been doing for years. In the position I'm in - I'm an employee - and if I say we have to spend $100, [the owner resists]. But with the certification requirement, now he recognizes he has to spend the money."

ERP provides a simple but comprehensive workbook as part of its self-certification package. Business owners and operators use these workbooks to educate themselves about their regulatory requirements and compliance status, as well as environmental issues, such as pollution prevention and worker safety. The self-certification checklist cross-references the standards outlined in the workbooks. Facility managers rely on the workbooks to help complete the self-certification.

Closely linked to the self-certification process and the compliance assistance tools is ERP's performance measurement methodology. MA DEP developed a set of environmental business practice indicators (EBPIs) for each of the three industry sectors under ERP. These EBPIs are industry-specific performance measures selected by the state that provide a snapshot of a facility's environmental performance and enable the state to track progress. The number of EBPIs varies from sector to sector (see text box, "Examples of EBPIs"). There are 8 EBPIs for photo processors, 16 EBPIs for dry cleaners, and 18 EBPIs for printers.

How Are ERP Tools Linked?

ERP's three major tools—self-certification, compliance assistance, and performance measurement—complement each other to create an integrated, dynamic, and balanced approach to environmental protection. Together, they balance the need to help companies while also holding them accountable for results, and as Figure 1 shows, they involve several interrelated components.

The first tool—compliance assistance—is fundamental to ERP. In conjunction with the ERP kick-off, MA DEP conducted multiple statewide compliance assistance workshops along with interested trade associations and the Massachusetts

continued on next page

Examples of EBPIs

Printers:

- Does the printer have a sign prohibiting discharge of process chemicals down the sink?
- Is the printer meeting the 2 parts per million (ppm) silver discharge limit or are they hauling wastewater?
- Are the fountain solutions used on the offset web-fed lithographic press alcohol-free?
- Does the printer recycle aluminum printing plates?

Dry Cleaners:

- Is the facility in compliance with the quantity and time limits for hazardous waste storage?
- Does the facility discharge separator water to a sewer, tank, evaporator, or container—and never to the septic system?
- Is leak detection performed weekly, following the workbook protocol and using proper leak detection equipment?
- Is there no odor of perchlorethyene readily detectible in the facility?

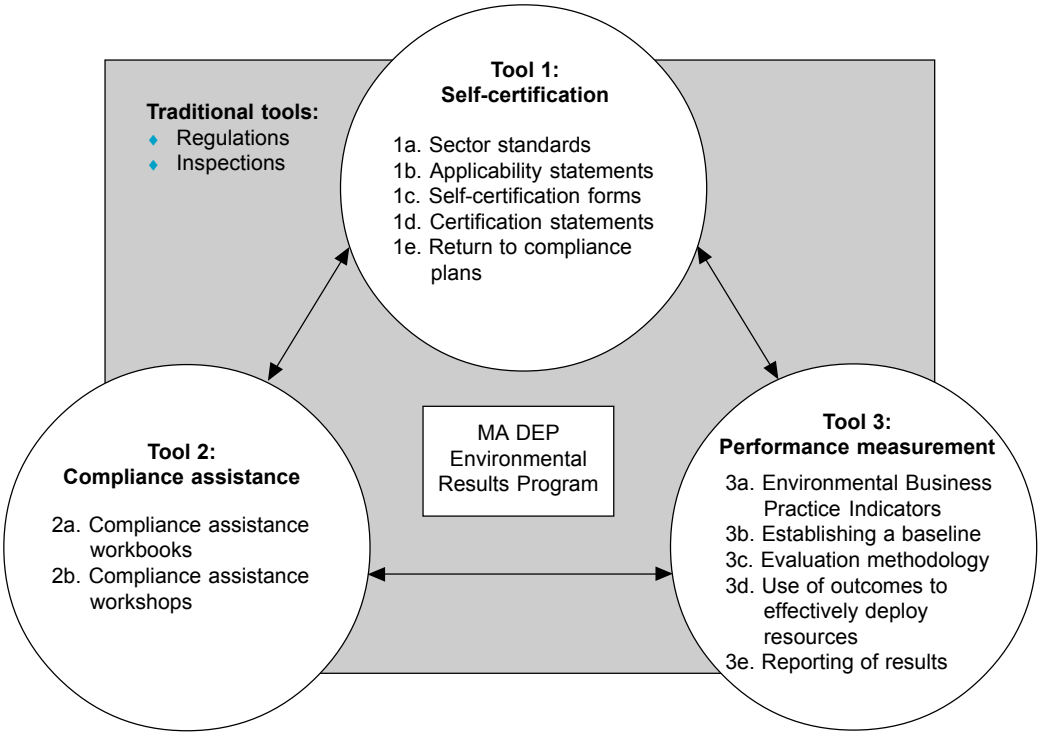
Photo Processors:

- Are hazardous waste containers closed except when wastes are added?
- Are containers labeled "hazardous waste"?
- Is the facility meeting 2 ppm silver discharge limit?
- Is the facility sampling?

"Evaluation of the Massachusetts Environmental Results Program," Susan April and Tim Greiner, National Academy of Public Administration Research Paper # 1, *Environment.gov: Transforming Environmental Protection for the 21st Century*, NAPA, Washington, DC, 2000. p. 1.30.

continued from previous page

Figure 1
ERP Tools



Office of Technical Assistance. The compliance assistance workbooks, which were developed in conjunction with stakeholders, link self-certification and performance measurement. The workbooks are written from the business operator's point of view, walking through the facility's processes and outlining where each requirement or pollution prevention aspect would apply. The workbooks provide self-audit directions, as well as pollution prevention tools and techniques from a multi-media approach. MA DEP has made a special effort to ensure the workbooks are written in plain language and useful for all business operators, including non-English speaking operators. For example, since approximately 40 percent of Massachusetts's dry cleaner operators are Korean, MA DEP had the dry cleaning workbook and certification forms translated to overcome any language barriers.

Self-certification is a unique element of the ERP approach because it replaces the facility-specific—and often resource-intensive—permitting process. Business operators use the compliance assistance workbooks to determine if they have to self-certify. Some may not. For example, some dry cleaners centralize their dry cleaning operations off-site; in such cases, the drop-off/pick-up facility would fill out the Applicability Statement and explain why ERP is not applicable. Facilities that do determine ERP to be applicable complete Certification Statements. These are the mechanisms that bind business owners and operators to environmental compliance. Penalties may be assessed for false, inaccurate, or misleading statements. The self-certification requirement ensures that a facility owner/operator will closely review the workbook, fill out the compliance checklist, and seek other compliance assistance in order to meet the obligations. If a facility believes that it is not in compliance, then it must submit a Return to Compliance Plan, which is then reviewed by the Department to ensure its appropriateness.

Measuring performance is critical for evaluating the effectiveness of any regulatory program. ERP uses industry-specific EBPIs that are linked to selected regulatory requirements and pollution prevention measures. Prior to beginning its compliance assistance activities, MA DEP conducted

continued on next page

continued from previous page

random inspections of each sector to develop a baseline of industry performance. After the full implementation of ERP in each of the three sectors, MA DEP conducts periodic random inspections of each sector using the EBPIs and statistical analysis to measure individual facility and whole industry sector performance over time.

The outcomes from the ERP measurement process are used in two ways. First, they help MA DEP determine how to more efficiently target statewide sector resources. If a sector's performance is high, MA DEP may decide to reduce the number of inspections or audits; conversely, if EBPIs indicate a decrease in performance, MA DEP could increase inspections, compliance assistance, and general enforcement actions in the sector.

Second, the outcomes form the basis for the industry performance reports. MA DEP plans to produce regular Industry Performance Reports for its ERP sectors. These reports will be the principal mechanism for reporting of results for each sector. They will include: data on the environmental performance of the industry (e.g., overall industry scores and benchmarks for individual facilities), and illustrations about how facilities in the system certified compliance (e.g., 650 out of a possible 700). These publicly available reports will not only be invaluable to state regulators and industry groups, but will provide citizens with information about the industry as a whole and about individual facilities.

What Are the ERP Results to Date?

Review of ERP data reveals overall environmental performance improvements in all three business sectors, as well as many examples of significant performance improvements within individual sectors. Using the EBPIs, MA DEP has determined that the overall performance for dry cleaners, photo processors, and printers has had a statistically significant improvement from before the program began, compared to the first year of certifications. Overall performance for each of these sectors has continued to improve in subsequent years.

ERP has also generated significant environmental results. In the dry cleaning sector, for example, MA DEP, based on several assumptions, has estimated that more than 22 tons of perchloroethylene emissions have been reduced as a result of industry performance improvements with leak detection and proper use of leak detection equipment.

The focus of ERP on small sources of environmental emissions has allowed MA DEP to better quantify the cumulative impact of these diffuse sources. For example, MA DEP estimates that based on average facility purchases of perchloroethylene in the state, the current dry cleaner universe of regulated facilities is equivalent to about 60 hazardous air pollutant major sources; and for printers, based on the potential to emit for all printers under the ERP emission threshold in the state, the printer universe of regulated facilities is equivalent to about 17 VOC major air emission sources.

ERP has also generated significant environmental results. In the dry cleaning sector, for example, MA DEP, based on several assumptions, has estimated that more than 22 tons of perchloroethylene emissions have been reduced as a result of industry performance improvements with leak detection and proper use of leak detection equipment.

ERP has resulted in, and is expected to continue to maintain, improved environmental business practices in each business sector. For example, printers have switched chemicals used to wash printing presses; surveys indicate that dry cleaners better understand the hazards linked to the use of perchloroethylene; and photo processors are expected to reduce their discharges of silver-contaminated wastewaters.

There are benefits for small businesses participating in ERP. These benefits range from facility-specific corrective actions to sector-wide performance improvements. Many small businesses have found that ERP has helped level the "playing field" between businesses complying with regulations and those knowingly skirting their regulatory responsibilities. ERP also has helped those businesses that have wanted to comply with Massachusetts regulations but did not know how to do it. It has also offered an opportunity for small businesses to demonstrate that they are "good environmental citizens." ERP also provides pol-

continued on next page

continued from previous page

lution prevention techniques that save money, as well as fee consolidation and cost reductions compared to case-by-case permitting. Prior to ERP, for example, a mid-size Massachusetts printer found that it was costing more than $2,000 in permit fees, compared with the annual $200 ERP fee.

From the regulatory perspective, ERP has enabled MA DEP to bring many more facilities into the regulatory system. Most of the facilities comprising the three business sectors covered by ERP were largely unknown to MA DEP prior to ERP. Under ERP, the number of facilities identified for the three ERP sectors has increased from approximately 380 to over 2,200.

This partnership is interested in creating opportunities for other states to learn about the ERP approach and its tools, in facilitating information sharing among states, and in supporting use of the ERP to solve environmental problems.

The U.S. EPA/ Massachusetts ERP Partnership Project

Beginning in the fall 2000, several EPA headquarters offices (e.g., the Office of Policy, Economics, and Innovation and the Office of Enforcement and Compliance Assurance) and EPA Region I (Boston, MA) joined forces with MA DEP to investigate whether the ERP approach and its tools can be transferred to other states and other environmental management issues. This partnership is interested in creating opportunities for other states to learn about the ERP approach and its tools, in facilitating information sharing among states, and in supporting use of the ERP to solve environmental problems. To date, EPA and Massachusetts officials have conducted meetings with more than a dozen states. EPA regional officials are currently following up with individual state officials to determine how ERP may be useful to them. One suggestion that several states have made is to apply ERP to a common sector in a region, so various states could exchange mutually usable information and address an environmental problem each of them is dealing with, as well as providing an opportunity to pool resources in developing materials.

To assist states in understanding ERP, several communications materials have been created or are under development. An Executive Summary and Brochure are available, and an ERP Users Guide is under development. Copies of these communication materials are available at the EPA and MA DEP websites—http://www.epa.gov/permits and http://www.state.ma.us/dep/erp.

With more than 2,200 Massachusetts businesses in three sectors submitting annual multi-media compliance certifications, MA DEP is in the process of expanding ERP to single medium cross-sector applications. MA DEP is in the process of expanding ERP to: (1) businesses discharging industrial wastewater (IWW) to sewers and (2) businesses installing new commercial boilers in the 10-40 million BTU per hour range. MA DEP expects to have the ERP approach in place for boiler users in the early fall 2001, while IWW certifications are planned for early 2002.

MA DEP also is trying to further reduce the cost to businesses and government using the ERP approach. The state is pursuing various electronic government enhancements and believes that new system automation improvements will help businesses more easily comply with ERP requirements. These improvements also will help the state to more efficiently assess and analyze ERP results to enhance the environmental performance of large numbers of small businesses. EPA has provided to MA DEP some funding for measurement, automation, and other program development efforts.

Over the past several years, states have initiated many innovations that offer opportunities for expansion. ERP has proven to be a very promising example of how to use an innovative environmental management approach to successfully link regulatory requirements with compliance assistance and performance measurement.

Lauren Liss is commissioner of the Massachusetts Department of Environmental Protection, Ira Leighton is the acting regional administrator for EPA New England, Sylvia K. Lowrance is acting assistant administrator of EPA's Office of Enforcement and Compliance Assurance, and Thomas J. Gibson is associate administrator for EPA's Office of Policy, Economics, and Innovation. *The authors wish to thank Steven DeGabriele and Tara Velazquez of MA DEP and Gregory Ondich and Beth Termini of EPA for their assistance in preparing this article.*